

30- At the firing level of a nerve action potential (spike):

- a. the membrane potential equals + 35 mV
- b. most of the voltage – gated K^+ channels are opened
- ☒ c. most of the voltage – gated Na^+ channels are opened
- d. Na^+ influx stops
- e. K^+ influx occurs

31- Saltatory conduction of the action potential:

- a. occurs in unmyelinated nerve fibers
- b. is slower than local circuit mechanism
- c. needs more energy than local circuit mechanism
- d. occurs in myelinated and unmyelinated nerve fibers
- ☒ e. needs less energy than local circuit mechanism

32- Concerning smooth muscle contraction:

- a. calcium ions bind to troponin
- ☒ b. Ca^{++} needed to initiate contraction comes from the ECF
- c. Ca^{++} needed for contraction comes from the terminal cisternae (sarcoplasmic reticulum)
- d. compared to skeletal muscle, smooth muscle contraction is faster
- e. none of the above is correct

33- Neuromuscular transmission:

- a. is unidirectional from the muscle to the nerve
- ☒ b. is unidirectional from the nerve to the muscle
- c. is stimulated by magnesium ions in the ECF
- d. is stimulated by curare
- e. none of the above is correct

34- In skeletal muscle contraction myosin heads bind to (attach to):

- ☒ a. actin
- b. troponin
- c. tropomyosin
- d. calmodulin
- e. Ca^{++}

?? 35. All of the following are true EXCEPT:

- a. myasthenia Gravis is an autoimmune disease
- b. the cause of Rigor Mortis is the lack of ATP required to induce relaxation
- c. Ca^{++} released from sarcoplasmic reticulum
- d. Ca^{++} stored in terminal cisternae
- e. in skeletal muscle prolonged strong contraction leads to fatigue

36. During absolute refractory period in the nerve cell:

- a. new action potential could be generated with same stimulus
- ★ b. new action potential could not be generated at all
- c. new action potential could be generated if the second stimulus is equal to the first stimulus
- d. new action potential could be generated if the second stimulus is stronger than the first stimulus
- e. all of the above are incorrect

37. During an action potential, depolarization of the nerve cell is caused by:

- a. outflow of Na^+
- ★ b. inflow of Na^+
- c. inflow of K^+
- d. outflow of K^+
- e. outflow of Ca^{++}

38- The function of troponin T is to:

- a- cover the active site of the actin filament
- ★ b. bind with the tropomyosin
- c. bind with the myosin filament
- d. bind with Ca^{++}
- e. cleave (breakdown) ATP

39- During isometric contraction:

- a- the length of the muscle is constant
- b the tension is constant
- c. the length of the muscle is decreased
- d. no work is done
- ★ e. only b & c are correct

28- Excitation contraction coupling in skeletal muscle does not include:

- a. occurrence of muscle action potential
- b. propagation of muscle action potential on both sides of the motor end plate
- c. release of calcium by sarcoplasmic reticulum (terminal cisternae)
- d. binding of myosin heads to the active sites of actin
- ★ e. hydrolysis of norepinephrine by monoamine oxidase (MAO)

29- Which of the following is correct?

- a. nerve fibers are classified into A, B, and C, according to their length
- b. Ach is destroyed by AChE
- c. skeletal muscles cannot be tetanized
- d. A fibers are myelinated fibers
- ★ e. only b & d are correct